Medicine and Surgery in the Orient

Early Days of the American Surgical Association

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MEDICINE AND SURGERY IN THE ORIENT

EARLY DAYS OF THE AMERICAN SURGICAL ASSOCIATION

BY

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MODERN MEDICINE AND SURGERY IN THE ORIENT.[1]

A RECENT visit to the Orient has afforded me the opportunity to study modern scientific medicine as it exists there to-day. Through the courtesy of members of the medical profession and others, I was permitted to make extended observations of the conditions which are present, and which have exerted a dominating influence in the development and growth of scientific medicine in the East. I have chosen to speak of "Modern Medicine and Surgery in the Orient," and not of ancient, empiric medicine, as the history of medicine tells us it existed from the earliest recorded period of time. In the paper which I read before the Association, at the meeting at St. Louis, in 1904, on the "Evolution of Surgery," I directed attention to the practice of the art of surgery at that time, when it existed as an art, and not as a science, and in considering the evolution, or the unfolding of surgery, I endeavored to show that this was accomplished by a gradual ingrafting of the science, influenced greatly by important controlling factors, most importantly by the cultivation of human anatomy, so auspiciously begun in the great school of Alexandria three hundred years before the Christian era, inspired by the instruction of Herophilus and Erasistratus, the first anatomists who dissected and described parts of the human body. Following in order, comparative anatomy, physiology, pathology, chemistry, and therapeutics were brought to make their contributions to the growing science, broadening the fields of investigation and determining its scope.

[1] Reprinted from the Transactions of the American Surgical Association, 1908.

In the beginning, the art of surgery was advanced to quite a high degree in some parts of the Orient, notably among the Hindus, where such important surgical operations as lithotomy, herniotomy, abdominal section, with intestinal excision and suture, Cesarean section, extraction of cataract, plastic operations for restoration of the nose, were undertaken; fractures and dislocations were treated and differential diagnosis elaborated; constitutional treatment was instituted in surgical cases; numerous surgical instruments were designed and manufactured, most of which are in use today.

From this beginning in the East medicine came into the West, was developed by teaching and authorship, and as well by individual attainment, by the systematic courses of instruction in the school of Alexandria, and the genius of Galen, of Celsus, and of Paulus of Egina; elaborated, as it stepped upon the Continent of Europe, by the erudite Hippocrates, whose treatises in the "Hippocratic collection" are encyclopedic in character, perfect models in descriptive precision, giving evidence of original investigation, of accurate observation, of knowledge, and of skill gathered in fields of wide experience; expounded in the great universities of Salerno, of Padua, of Naples, and of Bologna, that of Padua giving to the world William Harvey, the discoverer of the circulation of the blood, a student in anatomy under the illustrious Fabricius. Progressing across the continent, it found exposition in the Universities of Paris and of Lyons, and, crossing the channel, reached the portals of the University of Edinburgh, where clinical medicine and surgery came into existence, methods in teaching which, in their far-reaching influence, were the most important contributions which had been made up to that time, and which have determined, to this day, the character of medical instruction the world over.

To our country the University of Edinburgh gave instruction in medicine, through Dr. John Morgan, a graduate, who in 1765 founded the Medical College of Philadelphia. This college, continued in direct succession, is in full development, the Medical Department of the University of Pennsylvania.

As a science, medicine returns today to the Orient expanded, purified, refined, made what it is by the genius of Virchow, of Pasteur, of Koch, and of Lister, who, as illustrious disciples of their noble profession, have made such eminent and valuable contributions whereby suffering humanity finds relief. Into the hands of the intelligent physician they have placed goodly weapons with which to wage the never-ending warfare against disease and pestilence, have made it possible for enlightened communities to anticipate the impending contagion, and by the timely adoption of well-defined measures and the use of agents, the value of which have been accurately determined, render harmless its attacks.

To the efforts of these great promoters of modern medical science should be added the results obtained by the patient and painstaking labors of the original investigator in the laboratory and in the institute for research, who, unmindful of the luxurious rewards of wealth, with self-sacrificing zeal and well-trained intellect, spends his life in unremitting toil, to extract truth from refractory nature, to contribute knowledge to the common stock, and to make good the statement that in the fifty years past "the world has learned more of truth available for the improvement of man's stay on earth than was known in the thousands of years between the dawn of creation and the middle ages." And thus, the science of medicine, with other sciences which, in this fleeting half century, have so profoundly influenced the life conditions of the world, has passed on to the ancient and crumbling civilizations of the East, following closely in the wake of the trader

seeking commercial opportunities, and hand in hand with the devoted missionary, bearing messages of love, of faith, and of hope inculcated by the Great Physician and Healer. Together they have penetrated the innermost parts; have quickened the stagnant thought and awakened the dormant energies of China; have regenerated Japan, engrafting upon conditions of life engendered by the feudal state, intellectual, social, and political, the energizing influences of Western civilization. In India, they have torn asunder the time-honored, self-satisfying tenets which controlled their schools of philosophy, and uncovered to the gaze of the world the mystic elements of their cults.

To comprehend the position of modern scientific medicine in the Orient, we must have knowledge of the institutions engaged in teaching the science, the methods of instruction employed in theory and practice, their equipment with all of the appliances for the successful conduct of laboratory and research work, the provision for extended clinical instruction, the attainments of the teachers, and the place they occupy in the world of science. In Japan, the country I visited first, this knowledge was not very difficult to obtain. Education in medicine is there a part of the general system, which is as complete in its development as may be found in any country of the world. The educational centre is Tokyo, the seat of government since 1590, and the residence of the Mikado, or Emperor, since 1868, when he left Kyoto, where he had been a virtual prisoner and deprived of his imperial rights and privileges by the Shogunate, the head of which was the Shogun, who, with his great feudatories, his armed retainers, and well-filled exchequer, had ruled the Empire. The act of interference by the United States Government in 1853, when Commodore Perry, with his fleet, sailed into the harbor of Yokohama and demanded, on the part of his Government, the abandonment of the policy of isolation

practised by Japan, gave the final blow to the Shogunate and restored the Mikado to the absolute power which had belonged to his ancestors centuries before.

In Tokyo one of the two great universities of Japan is located; the other is in Kyoto. That in Tokyo consists of six colleges—of law, medicine, engineering, literature, science, and agriculture; students come to the university not only from all parts of Japan, but also in great numbers from China. At the time of my visit I was told that there were some 15,000 Chinese students in attendance in the educational institutions of Tokyo. This fact is significant when considered in connection with the increasing influence exerted by Japan in the affairs of China, and of the possible effect this may have upon her future.

Of the one hundred and thirty-one Professors in the University, the College of Medicine has twenty-four, with four to five hundred students, who pay a tuition fee each year of fifty yen—twenty-five dollars. The prescribed course of instruction covers a period of four years, and the students are divided into four classes. The curriculum includes all of the branches of medicine, those fundamental being assigned, as is usual and necessary, to the first years, and the practical courses coming in the last, with instruction in hospital wards and in the clinical laboratories. There are two hospitals connected with the work of the college, having a total capacity of 571 beds. The material for clinical instruction is very large, and the two operating rooms, which seat 300 students each, are examples of the most modern methods of construction, supplied with all of the requirements for perfect aseptic operative procedures.

As the early instructors in medicine were Germans, the teaching is German in character. Some of the lectures are delivered in the German language, and the text-books are largely German or

translations from that language. The library is large and supplied with volumes on all of the subjects of medicine, many in the English language, among them a number of American text-books.

In addition to the College of Medicine of the University, there are in Japan eight other medical colleges. These institutions do not possess the authority to grant licenses to practise; the graduates are required to pass a satisfactory examination before a Special Board of Medical Examiners before they receive permission to practise.

Red Cross Hospital, Tokyo.

In these institutions the standard of instruction is of the best character, equal in every respect to that of the University Medical College. Foreign physicians who are graduates of medical colleges having a reputable standing will, on application, be granted a license to practise.

There are a number of hospitals in Tokyo outside of those connected with the medical colleges; most, if not all of them, have a

training school for nurses, the courses of instruction in which extend over a period of two years. The outdoor clinics or dispensary services are crowded each day by the poor who are in need of medical treatment. In the Tokyo Charity Hospital, with 150 beds, there is a training school for nurses, with 85 pupils. The army hospital is the largest in Tokyo, having 500 beds; in this hospital the nursing is done by the soldiers, who receive special training for this service.

The hospital considered the best in Tokyo is that of the Red Cross Society, with a capacity of 250 beds, a staff composed of the best physicians in the city, and a corps of 260 nurses, more than one nurse for each patient. This excess in the number of well-trained nurses insures effective service and gives a deserved reputation to the hospital.

My friend, the late Dr. Senn, to whom I was greatly indebted for cards of introduction to the prominent medical men of Japan, and from the account of whose investigations I learned much of the condition of scientific medicine in the East, has spoken in this way of the Japanese nurse: "The Japanese women, by birth, nature, and training, are admirably adapted for the care of the sick. Their graceful stature, the innocent, sympathizing expression of their eyes, their small, delicate hands, and their light, noiseless gait are qualities which go far to make them ideal nurses. Each candidate for the training school connected with the Red Cross Hospital must have a good elementary education, and is subjected to a thorough physical examination. The age limits are from eighteen to thirty years, and for military service from twenty to forty years. The nurses in the Red Cross Hospital receive the most practical kind of instruction by lectures and demonstrations. They are made nurses and not half doctors, as is the case with many of our training schools. They serve an apprenticeship of three years,

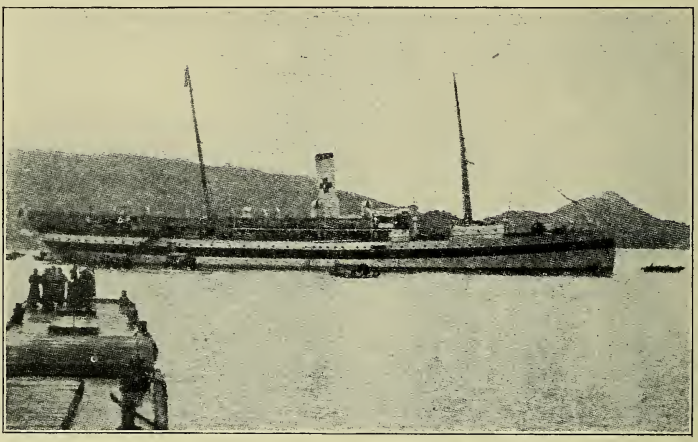
and on passing a satisfactory, rigorous examination, receive the necessary credentials which entitle them to enter private practice. A graduated nurse in private practice receives from one yen (50 cents) to a yen and a half (75 cents) a day—quite in contrast with what our nurses are accustomed to charge for their services when on duty. A gilt maple leaf is the insignia of a graduate nurse from this institution, while the small Red Cross on the front of the high white cap is common to the graduate and undergraduate nurse. In the operating room the anesthetic, usually chloroform, is administered, by the drop method, by a graduate nurse, supervised by one of the surgical assistants. The nurses make the necessary preparations for the operation and handle the instruments and dressing material. The gauze sponges are sterilized in a tube-like tin box with a closely fitting cover. The nurse opens this box, grasps the sponge with an aseptic forceps, and with this instrument hands it to the operator. As soon as a Japanese young woman is accepted as a pupil she leaves behind her native dress, which is exchanged for a white dress, and the wooden sandal or clog gives way to the noiseless straw sandal. In case of war, the Red Cross nurse, when ordered to duty, wears a black dress and a white cap."

This is, indeed, a pleasing picture of the attractive qualities of the Japanese women which would make them ideal nurses, and I hesitate to say aught which would cloud its coloring or disturb the harmonious blending of its tints. I think, however, that it has not been so painted by some who have gone among the Japanese people, have observed their characteristics, and become acquainted with their social conditions. There are no people in the world who claim a civilization above that of the barbarian so bereft of emotions as are the Japanese; they are trained in a school of rigid repression of such attributes of the mind and heart. The

obeisance of recognition, which, when made to a superior in social position, brings the woman to the floor, on bended knees and with cringing body, does not express any sentiment save that of abject servility. Between father and mother, husband and wife, sister and brother there is no conduct which betokens parental, conjugal, or filial love and affection. Wifely respect and homage to the husband and father, and filial obedience, are so unyielding, that with joy and gladness, encouraged and supported by the hearty approval of family, relatives, and friends, the young daughter, budding into womanhood, consigns herself to a life of shame, at the behest of the father, to relieve him of financial embarrassment. Obedience to the command of the father and of his male descendant and his successor, the oldest son, as the unchangeable head of the family, is regarded and classed as a cardinal virtue, and has been cultivated as such from time immemorial. So incomprehensible is the conception of morality by these people, and so much at variance with that entertained by people imbued with the principles of a Christian civilization, that no disgrace attaches to any violation of the moral law. To such extent does this exert a controlling influence that the inmate of the Yoshiwara (the quarter of the city inhabited by the licensed prostitutes) may be taken out to become the respected wife of one in her social class. This fact was told to me by a lady who, in her missionary experience, knew of such instances, and inspired by the highest motives of duty to a fellow being, who could claim forgiveness, because "she knew not what she was doing," had assisted in the work of reclamation.

In no other part of the world is the Red Cross Society so perfectly organized or so efficiently equipped for rendering service to the sick and wounded of the army and navy in the time of war and in the time of public calamity to the people, as when earthquakes, eruptions, inundations, hurricanes, shipwrecks, railway

disasters, etc., occur. The society owns two hospital ships, which are placed in service to take care of the sailors, and are also used for transportation of the sick and wounded of both systems of the military service, army and navy. During times of peace these ships are leased to a transportation company, subject to immediate release from this service when needed. The revenue received in this way contributes to the building of other hospital ships.



Red Cross Society Hospital Ship.

The storerooms of the society are filled with articles and appliances which may be needed in the performance of the most important duties of those in charge of the work of the society in the field or on board of the hospital ship.

An Imperial Prince is the Honorary President of the society, and the membership is 900,000, making it the largest in membership in the world and, as well, the richest. The income in 1903 was over 2,965,300 yen, or $1,482,650. A large corps of surgeons and trained

nurses are ready to report at short notice, and when they are on duty are under military control.

A card of introduction to Baron Hashimoto, one of the retired surgeon-generals of the Imperial Japanese army, and very active in promoting the work of the society, opened the doors of the hospital to me and gave me the pleasure of meeting him. A lady friend—Miss Annie West—a missionary of twenty-five years' noble service in the calling she had chosen for her life's work, who during the Russo-Japanese War had rendered such faithful and useful services in the hospital as to commend her to the Empress as worthy of an Imperial decoration, which she received, was my guide through the hospital, in company with members of the staff of resident and visiting surgeons.

Japan has a well-equipped school for the instruction of its military medical officers. Young graduates in medicine who desire to enter the military service are received, after passing the physical examination required, into this school. They are placed under military discipline, and are instructed in their duties as officers of the medical service. At stated times all of the surgeons in the military service must take postgraduate courses, covering a period of four months in laboratory instruction and in clinical demonstrations.

Massage, the practice of which is of such value in medical and surgical conditions, is not only employed in the hospitals, where it is given by the trained nurses, but is practised generally among the Japanese people. During the night blind masseurs and masseuses, feeling their way through the streets of the towns and cities, with their staves striking upon the stones in rhythmical movements, accompanied by the sounds made by their wooden clogs, attract the attention of the residents by a plaintive call or a peculiar whistle. Called into the houses, they administer massage, charging

a trifling fee for the service rendered, thus making it possible for the poorest class of people to enjoy the benefits of a "rubbing." The "riksha" puller, after a day's labor, equal to that performed by the horse, indulges regularly in this method of treating stiffened

Blind masseur, Tokyo, Japan.

joints and exhausted muscles. So with the coolie, whose labor is so arduous and unremitting. The opulent merchant uses it as a luxury and needful frequently as a stimulating fillip to a sluggish condition of the superficial blood movement of the trunk and extremities.

It is interesting to know that massage was brought into Japan by the Malays at the time of predatory invasions, when they left not only some of their peculiar customs, but gave, it is believed, by racial intermingling, ethnologic types.

Bathing is universally indulged in by the Japanese in water the temperature of which is from 110° to 125°. The bathtub is usually built in the form of a tank made of wood, varying in size according to its uses in the home, inn, or public bath-house. The water is heated in a very primitive way by the introduction at one end of the tank of a small stove. Formerly in cities, as well as in villages in the provinces, promiscuous bathing of the sexes, devoid of bathing suits, was the custom; lately it has been forbidden in the cities, but is still practised in the country districts. In the villages the tank may be placed on the sidewalk in front of the houses, on the porch, or in the open space about the house. In the absence largely of running water, the tank, when once filled, does duty for indefinite periods, and to large and small numbers of persons. Soap is not used in the public baths, but is applied outside. Owing to the continuous use of the public bath, the charge, at all times very small, is decreased in proportion to the use and the condition of foulness of the water.

While the labor of the barber in Japan is not so arduous and constant as that of his colleague in China, owing to the custom which prevails there of shaving the head and arranging for the queue, it is possibly more varied in that he is called upon to render service to the female sex as well, who have, when married, their eye brows and superfluous hairs on different parts of the body removed by the razor, and their teeth blackened with the juice of the persimmon tree. In the barber shops the employees are dressed in loose white gowns, and have placed over the mouth close-fitting pieces of gauze, which protect the occupant of the

chair from exhalations which are sometimes very offensive, and, possibly, dangerous.

The conditions which accompany the much vaunted custom of bathing, whereby the Japanese claim credit for habits of cleanliness not practised by other races of the Orient, would seem to indicate an absence of consistency in the practice, which is hostile to faithful adherence to hygienic principles and sanitary regulations.

I feel I cannot better conclude the account I have given of what scientific medicine has achieved in Japan, as is manifested in the institutions organized and conducted for the education of students in medicine, equal if not superior to many of those existing in parts of the world the people of which are disposed to boast of the great advantages they enjoy from the conditions which belong to the civilization of the West; in the great results obtained in the relief of human suffering in their well-equipped and well-managed hospitals; in their military medical schools and hospitals; in the perfect organization and conduct of the Red Cross Society, than to speak briefly of what is being done in promoting the conservation of the public health, and of the work of the Tokyo Imperial Hygienic Institute, an institution which has been designated "the crowning point and pride of medical science in Japan." A card of introduction gave me admission and permitted me to spend several hours in the company of the founder and director in charge—Professor Kitasato—a most accomplished scientist, and his assistants, who afforded me every opportunity to inspect the institution and learn of its work. After graduation in Tokyo, Professor Kitasato went to Germany, where he became a pupil of Professor Koch, and gave seven years and a half to work in his laboratory. Endowed with a gifted mind, and an untiring worker, he soon gave evidence of his scientific attainments, accomplishing discoveries in bacteriology which had escaped the efforts of his

learned master—notably, the discovery and elaboration of a method by which he obtained a pure culture of the tetanus bacillus. Soon after his return to Tokyo, on the completion of his studies in Germany, he visited Hong Kong, China, where, at the time, the plague prevailed. His study of the disease enabled him to make a great contribution to medical science in the discovery of the Bacillus pestis, or plague microbe. The Hygienic Institute is a Government school of instruction, and is supported by an Imperial appropriation. A small tuition fee is received from the students, some eighty in number, who are graduates in medicine and physicians engaged in practice throughout Japan. The course of instruction extends over a period of four months, and is devoted entirely to laboratory and research work. It is essentially a school of preventive medicine. Associated with the work of the Institute, and under the direct control of Professor Kitasato, is a laboratory for the preparation of serums and antitoxins for infectious diseases, including a long list; a station for the manufacture of vaccine lymph; a hospital for the treatment of patients suffering from acute infectious diseases, and a farm on which there is a colony of lepers. A large number of animals of various kinds are kept to assist in the preparation of the serums and in the research work of the laboratories, among them 200 horses and a number of heifers, dogs, monkeys, rabbits, guinea-pigs, etc. I witnessed the operation of venesection, performed upon a horse which had been infected with the plague bacillus, the blood being used for the purpose of making the prophylactic serum. The leper colony is established on a farm a few miles distant in the country, and contains about fifty patients, men and women, suffering from the two forms of leprosy—the anesthetic and tubercular—in various stages of development. Professor Kitasato hopes, by the opportunity thus afforded him in the collection of patients, to study the disease and discover a remedy for its cure.

In the Orient, Japan takes the first place in all that relates to the adoption and cultivation of modern scientific methods in medicine. That this is so, and that it has been done, is, I think, easily understood, when the character of the people and their conditions of life, which have existed for ages, under the feudal system, are taken into consideration. From under this system the continent of Europe emerged and gradually acquired the conditions of life, social, intellectual, and political, which founded and have given character to Western civilization. It is not so with China, with the many ages of her civilization and modes of government, nor with India under her former or present mode of government. Of all the countries of the Orient, Japan has the most perfect and extended system of education—from the kindergarten, through the grammar and high school, to the college and university. Education is compulsory, and the school and college training is such as to fit her citizens for diversified callings and professions. In Japan, religion does not exert the all-absorbing control as in China, and especially in India.

On completing my sojourn in Japan I journeyed to China, stopping *en route* at Kyoto, Kobe, and Nagasaki, in Japan. Hong Kong, China, was my destination, and there, through the courtesy of friends in providing me with letters of introduction, I was enabled to visit the hospitals and obtain some knowledge of medical matters. It was not a very fertile field for observation, as the city is a British concession, and is given over almost entirely to the purposes of trade. Hospitals and health offices are in the hands of English physicians, and are conducted in the same manner as in the mother country. I soon learned there, as in other cities of China I visited, that outside of the few hospitals, and fewer medical colleges connected with them, under British or American control, modern medical science did not have a very

Hospital in Hong Kong, China, conducted by English physicians and surgeons.

Dr. Mary Fulton, the teacher, and the class of students in the Medical College founded by Dr. Fulton, Canton, China.

firm foothold in China. In the Empire, to a large extent, it did not exist. For some years there has been associated with the work of the missionaries medical care and treatment of the sick among the natives. In Canton I had the opportunity, as the guest of Dr. Mary Fulton, who has founded a medical college for the instruction of Chinese women and a hospital for women in connection with it, to learn what has been done in this direction. The college and hospital are conducted in harmony with the work of her brother, the Rev. Dr. Fulton, a missionary of twenty-five years' experience in this field. There is great need for educated foreign and native women physicians in China, and Dr. Mary Fulton is to be highly commended for the important work she has undertaken. In the interior the conditions of life are such as to make the practice of medicine a very difficult and arduous task, attended in some instances by danger, as was made manifest in an experience related to me by Dr. Fulton. On this occasion she was in attendance upon a case in a miserable hut, the single room of which contained not only the human family, but all of the domestic animals. The pigs, for convenience and supposed safety, were placed upon an elevated platform occupying a corner of the apartment. At midnight, during her lonely watch by the bedside, a large tiger, gaining admission through the entrance, leaped upon the platform, seized an unwilling pig, and escaped with it into the jungle.

Chinese girls are in constant danger of kidnapping for the purpose of subjection to immoral lives, to prevent which they are carefully guarded in their homes and in the schools which they may attend. These buildings are placed in a compound—as it is called—a place of varying size, surrounded by a high wall, and the entrances are protected by strong gates, with a watchman to guard them. Married women are not exposed to the danger of kidnapping, and in some cases the girls contract marriage at an early age, so that they may obtain their education unmolested.

Mrs. Butler's school for girls, in which there are some two hundred, is an institution which is doing excellent work in the education of Chinese girls, some of whom take up work in the missionary fields when they have acquired a medical education. I found also much interest in a visit to the Canton Hospital, which was opened, I think, in 1835 by Dr. Kerr, a missionary. This hospital has had a place in the records of surgery for many years, by reason of the large number of cases of vesical calculi operated upon by Dr. Kerr. The collection of calculi in the museum contains hundreds of specimens, and they present many points of interest in character and size.

On the day of my visit I witnessed two operations by Dr. Todd, in charge of the hospital, and Dr. Peck, U. S. Navy, in which calculi of large size were removed by the lateral method. Chloroform was the anesthetic agent used, and I was told that it was given freely to Chinese patients without danger. Also, that recovery from operation was the rule, Chinese patients not being very susceptible to shock from operations or septic conditions. In the wards I saw patients lying on boards without mattresses, with simply a blanket for covering, which formed part of the ancient wooden bedsteads, with openings to permit the urine to pass to a receptacle on the floor. On all sides there were evidences of the lack of the employment of modern methods in hospital conduct, owing probably to the want of sufficient means.

In the hospital I had the opportunity of examining the small feet of a woman upon whom abdominal section had been performed. The small feet are produced by the process of "binding" the feet with tight bandages, and in this way preventing their growth. It is a cruel operation, and is now forbidden by edict. It was done by the rich families, who regarded it as a mark of distinction, indicating their position in the social world. In the

examination I made I found it very difficult to trace the outline of the bones of the tarsal and metatarsal regions, while the phalanges appeared to have undergone such atrophic changes as to make them quite indistinguishable.

I was glad to learn of the recent establishment of an insane hospital in Canton, accomplished largely through the efforts of the missionaries. Heretofore, I was informed, those suffering with insanity were put to death. The organization of a hospital for their care and treatment is a gratifying evidence of progress and of the proper appreciation of scientific medicine.

In Canton sanitary regulations are not enforced, and the foul air and filthy streets are a constant menace to the public health. The smells are rank, and make a lasting impression upon travellers who visit the city.

In marked contrast to the conditions which exist in Canton, the traveller sees much in Shanghai which gives evidence of the influence of Western civilization, in the palatial modern buildings, hotels, clubs, hospitals, and many charitable institutions. It must be said, however, that the Chinese part of the city, containing within the ancient walls over 1,000,000 inhabitants, still preserves the characteristic features and conditions of a Chinese community, undisturbed to any great extent by its juxtaposition to the foreign part of the city, which is occupied by representatives from every part of the civilized world, official, commercial, and religious, numbering some 6000 people. There are four hospitals. The Shanghai General Hospital is the largest, and has a capacity of 130 beds. It is conducted exclusively for the treatment of foreigners, and is in charge of the Sisters of Charity of the Order of Saint Vincent de Paul. It was opened in 1867, and contains private rooms and wards which may be occupied by patients who can pay a small charge and receive medical treatment free. In the

private rooms the charge is one "tael" (one Mexican dollar) per day. A generous patronage makes the hospital self-supporting, and gives each year a very satisfactory surplus. The remaining three hospitals are Chinese, two being in the charge of missionaries. One was established forty years ago, and has on its staff foreign and Chinese physicians and surgeons. In this hospital Dr. N. MacLeod, a graduate of the University of Edinburgh, one of the most prominent foreign physicians in Shanghai, introduced, in 1877, aseptic methods in surgery. Through the efforts of Dr. MacLeod and the foreign physicians much has been done to develop scientific medicine and promote the conservation of the public health in Shanghai, the influence of which is felt in some direction in the middle and northern parts of the Empire. A municipal health officer was appointed thirty years ago. Over five years ago a bacteriologist was chosen and the manufacture of calf lymph begun. Vaccine lymph is sent from this station to the interior of China, and is distributed to foreigners and natives. The establishment of a Pasteur prophylactic laboratory for the treatment of cases of hydrophobia gives gratifying evidence of progress. For a number of years a lock hospital has been in operation, where Chinese prostitutes undergo weekly examination and treatment. Within a few years this has been incorporated with an isolation hospital for the Chinese. An insane and isolation hospital have been built for the treatment exclusively of foreigners. Laundries, dairies, and cattle, meat, fish, and game shops are under municipal supervision. The slaughter of cattle, except in the public "abattoir," is forbidden. All night soil is removed daily, and used for fertilizing purposes. Some of it, Dr. MacLeod thinks, through the agency of myriads of flies which exist, returns to the kitchen and taints the food, producing a large proportion of the alimentary canal disorders and, possibly,

some of the cases of enteric fevers. Among the epidemic diseases, beri-beri and cholera occur quite regularly in the late summer and autumn. Among the Chinese it is thought tuberculosis does not prevail to the same extent as in the white races in other parts of the world. With the exception of acupuncture, which has been very generally practised among the Chinese for ages, the native physician does not undertake surgical operations. As a result, the hospitals, in the charge of foreign medical men, receive a large number of surgical cases. To the Canton hospital stone cases come from very distant parts of the Empire, the hospital having for many years enjoyed a reputation for the successful treatment of these cases. The same may be said with regard to tumors involving various organs and parts of the body, some of them attaining great size. In considering the state of modern medicine in China, it is necessary to bear in mind that it has reached its highest development in those cities in which there is a large foreign population, comparatively speaking, which demands its practice, among other conditions of Western civilization. In order that it shall permeate the interior of the Empire and have a recognized position throughout the country, it is necessary that the system of education shall be changed so as to be in harmony with that in Europe and America, or even that of Japan. Already an educational movement has been started in this direction, which will eventually accomplish the desired result. Throughout the Orient education has been the great lever with which countries have been raised to the appreciation of their great but dormant power. Japan has come to its full realization. China is awakening, and India, restless under foreign dominion, is cherishing, through its educational system, aspirations of nationalization.

On my way from China to India I stopped at Colombo, the seaport of Ceylon, an island colony of Great Britian. A small

medical college has been established here with a general civil hospital, a bacteriological institute, lying-in hospital, and a colony for lepers. The instruction in the college and hospital is given by English physicians and surgeons; women students are admitted. In the hospital the nursing is done by Anglican Sisters, assisted by nurses trained in the hospital. Another general civil hospital is at Kandy, a town of 20,000 inhabitants situated in the mountainous regions of the island, 1800 feet above the sea level and fifty miles from Colombo. The railway, *en route*, passes through the tea plantations of Sir Thomas Lipton, the well-known tea-grower and yachtsman, whose unsuccessful and persistent efforts to return the Queen's Cup to its original home has given him an international notoriety, and very largely, no doubt, increased the sale of Ceylon tea. The hospital is built on the pavilion system, with roofed connecting walks, cheerful, airy wards, and is well conducted by a staff of excellent physicians and surgeons, assisted by Anglican Sisters. It has a very interesting record in the treatment of cases of tetanus, some twenty cases reported without a death. Of these cases, a number were puerperal in character. The Government Botanical Garden, five miles from Kandy, is full of interest to the physician. It is an experiment station, and has in it a complete collection of tropical trees and plants. In the collection of trees are specimens of the different varieties of the cinchona. It was an agreeable pastime to an inhabitant of the temperate zone to wander through groves of cinnamon, nutmeg, and spice trees, the air laden with fragrant odors of mixed variety. Farther up the mountain, at an altitude of 7000 feet, there is another Government Botanical Garden, the purpose of which is the cultivation of trees and plants indigenous to a temperate climate. These gardens are educational institutions, and receive liberal support from the

British Government, which takes much interest in their successful conduct. In the Kandy garden it was interesting to see the monster bats—quite as large as the crow—hanging from the dead limbs of the trees in great numbers—apparently thousands of them. Disturbed by the noise of our carriage, they left their points of suspension and circulated about us, filling the air with a peculiar sound and emitting a very disagreeable effluvium.

Colombo is an important seaport, the stopping place for sea-going vessels going to and coming from the East, Africa, and Australia. It has never been infected by the plague, owing to the precautions taken and the vigilance practised by the plague committee, composed of municipal and medical officers. The spread of leprosy throughout the island is prevented by the strict enforcement of laws which compel segregation in the colony provided for all sufferers from the disease. Ceylon presents to the world a bright example of what modern medical science can do in conserving the health of the people, and in this way protecting its commercial interests, so as to make it the richest colony of Great Britain.

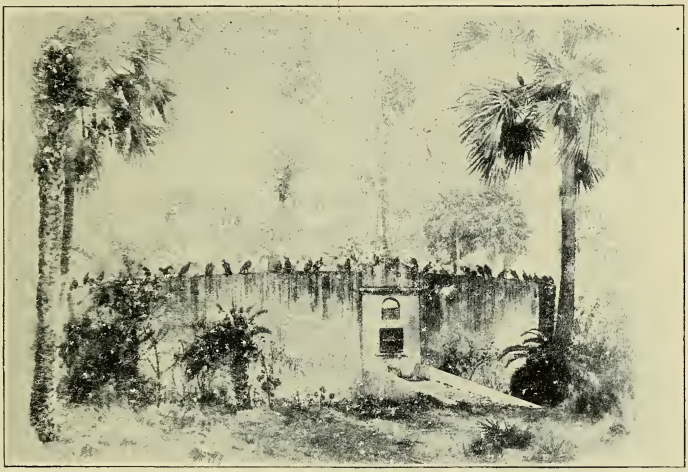
From Colombo I sailed to Bombay, a city of India sharing with Calcutta distinction as a great commercial metropolis as well as a medical centre. It has a population of nearly 800,000, somewhat less than that of the capitol, Calcutta, and it is the seat of the Grant Medical College, the largest one of the four medical colleges of the country. Connected with the colleges are hospitals which are used in conducting clinical and laboratory instruction. Besides these hospitals there are many located in the cities and towns throughout the country. The teachers in the colleges and attending physicians and surgeons in the hospitals are taken from the corps of medical officers in the Indian Military Service, which consists, at the present time, of 175,000 English and 250,000

native troops. Since the mutiny in 1857 the proportion of English to native troops has been increased, and the native troops are now enrolled from the lowest Hindu castes, which are not inspired with the spirit of nationalization as are those of the higher castes, and are, therefore, more subservient to discipline. The teachers in the colleges and medical officers of the hospital receive fairly liberal compensation for their work, and on retirement are placed on the pension list. In case of death, the widow and children receive pensions, the boys up to the period of manhood, and the girls until marriage. The students in medicine—male and female—consist of Hindus, Parsees, and Eurasians, or half-breeds. Very few Mohammedans enter the medical profession. The male graduates in medicine enter the military medical service among the native troops, obtain hospital positions and medical office in the municipal governments, engage in private practice, or serve as district physicians in the civil service, which in its work covers the entire country. In Upper India I met on the train a civil service medical officer, who informed me he was returning from a visit through his district, which had a population of 3,000,000 people. He, with a large corps of native physicians, had the medical care of this large number of inhabitants, a colossal undertaking in the presence of epidemics of contagious or infectious diseases. The female graduates in medicine take up hospital work, or engage in private practice, in which the success is not very great. Training schools for nurses are connected with the various hospitals; in these the instruction and training are not quite as efficient as in those of Japan. The medical colleges are in affiliation with the universities, which constitute the head of the educational system carried on by the British government. They are organized and conducted upon the same plan as the medical schools of Great Britian, the mother country. The requirements for

admission and graduation and the courses of instruction, including dentistry, are the same as in those schools. Students who desire to enter the military service after graduation must be of European or Eurasian parentage.

From this statement of the character of the medical institutions concerned in teaching scientific medicine in India, it will be interesting to note to what extent modern methods are employed in dealing with the great question of the prevention of disease and the successful control of it when present. There are many endemic and epidemic diseases occurring yearly at different seasons, which, owing to the religious beliefs and superstitions of the natives, as well as to their modes of life, make the work of the medical men most difficult, in some instances absolutely nullify their efforts. The Government, with all of its power, refrains, except in extreme conditions, from the enactment and the execution of sanitary laws and regulations, and hesitates to interfere with religious rites and customs which may be harmful to the well-being and welfare of the community, lest the quickened sensibilities of the natives should be aroused and increase the difficulties of peaceful control. The Hindu, whose religion forbids him to kill an animal, permits the plague rat, which carries in its hairy covering the plague flea, to eat from the receptacle containing his food, and to share with him, without restraint, the filthy hut he inhabits. The municipal authorities trap the rat on his place for the purpose of submitting it to examination and using it in experimentation, and the Hindu makes it free. The Government has, indeed, been successful in interdicting "Sutteeism," the self-immolation of the widow upon the funeral pile of the deceased husband, but it has not been able to prevent absolutely infanticide, caused by exposure of the female infant upon the banks of the sacred rivers, to become the prey of the rapacious crocodile. It required, I was informed,

much tact on the part of the municipal authorities to prohibit the subject of smallpox, with fully developed eruption, from parading the public streets of Bombay or taking part in public meetings of the natives, and so it may be stated with regard to other conditions of life which are hostile to the welfare of the community, as, for instance, the public cremation of the body of the Hindu in the open air, dead from contagious or infectious diseases



Towers of Silence, Bombay, India.

of most dangerous character, or the exposure of the dead bodies of the Parsees in the towers of silence, where the soft parts are devoured by vultures. The towers of silence are on Malabar Hill, one of the most fashionable parts of Bombay and the residence largely of the opulent citizens. A large reservoir which supplies this portion of the city with water is but a short distance from the towers, and until three years ago it was uncovered. It is related that it was not an unusual sight to see pieces of the dead bodies,

carried away by the vultures, dropped by them into the water of the reservoir, and also, that unfinished morsels of fingers and toes were brought into the houses of the fashionable residents of Malabar Hill by their pet dogs and cats, who gathered them on the well-kept lawns, on which they had been deposited by the vultures as they rested in the trees. Notwithstanding these unfavorable conditions and almost insurmountable difficulties which obstruct the adoption of progressive methods, the medical officers of the Indian medical service, with commendable zeal, continue their efforts to educate public opinion, and to inspire the natives with an appreciation of their labors in their behalf.

The plague appeared in India in 1896, since which time it has killed over 1,000,000 of the inhabitants, including in the list a few Europeans and not many Parsees. When it was ascertained that the plague rat was the cause of the disease, a war of extermination was commenced in different parts of the country, and by the orders of the Government a bounty was paid for the rats killed. It is interesting to note that, after a time, it was found that the natives had formed rat-raising corporations, which carried on a lucrative business, the adoption of a bit of Western civilization quite novel and unexpected. The Government, moved by an appreciation of its duty, called into existence the Research Commission, of which Mr. W. M. Haffkine, a scientist from Russia, was made the head. This gentleman has made valuable contributions to medicine in the discovery of a cholera serum and a plague serum, each possessing prophylactic powers. The Commission was installed at Parel, a suburb of Bombay, in a large building located in spacious grounds, which had been the residence of a former Governor-General. At the time of my visit Lieutenant-Colonel Bannerman, Major Lamb, and Captain Liston constituted the Commission, and to these officers I carried a letter of introduction from Mr. Millard, Hon-

orable Secretary of the Natural History Society of Bombay, which gave me the opportunity of observing the work done in the Research Laboratory. To these gentlemen I am indebted for many courtesies.

The Commission, acting in coöperation with the Board of Health of the city, receives each day a large number of rats, which are trapped in the different districts of the city, especially in those infected with the plague. Each trap is covered with a strong cloth covering and then tagged, stating the kind of rat—*rattus* or *rattus decumanus*—and where trapped. These are then transported to the laboratory and submitted to examination. On the day of my visit four ox carts laden with filled rat traps arrived, and I was informed that on some days at least one thousand were examined. The first step in the process of examination consisted in placing the live rats—some are found dead from the plague, and these are brought with the live rats to the laboratory—into an hermetically sealed receptacle and subjecting them to the vapor of chloroform. This agent kills the rat and simply stupefies the fleas. When dead, the rats are placed on a table covered by white paper, at which stands an examiner, a European, and his assistant, a native. These strip the rat with the hand, and by this movement dislodge the stupefied fleas, which, falling upon the white paper, are picked up by the moistened finger end and placed in a test-tube closed with a sterilized stopper. Shortly the fleas revive and are put away for use in demonstrations. From this table the rat is carried to the next, where the autopsy is made and the organs infected are removed. Usually the inguinal and axillary, seldom the cervical lymphatic glands, in some instances the lungs and the liver, are found involved. These organs are placed in a preservative fluid and kept for further examination and experimental purposes.

The fleas are used in two ways in experimentation. In the first, a guinea-pig is placed in the inner compartment of a box shaped like a large cheese-box, which is enclosed by wire netting having a large or small mesh, and the live fleas are deposited in the outer compartment on the floor, which has been covered with plain paper. If the meshes in the wire netting are large enough to permit the fleas to enter the inner compartment in which the guinea-pig is placed, it is found that the animal is infected with the plague bacillus, and after a period of incubation of nine days the disease manifests itself. If the meshes of the wire surrounding the inner compartment are too small to permit the ingress of the fleas, the animal is not infected. If, instead of the ordinary paper, "tangle-foot paper" is used to cover a portion of the floor of the outer compartment, leaving a free border on which the fleas are placed, it is found that the animal escapes infection, the fleas being unable to cross over the tangle-foot paper. The fluid obtained by crushing a number of fleas conveys infection if injected hypodermically into a non-infected rat or guinea-pig; the same condition occurs from the fluid obtained by crushing the infected organs taken from a plague rat. These experiments prove conclusively that there is, first, a plague rat stated to be indigenous to the Orient, of two or more varieties—rattus and rattus decumanus. Second, that the flea on the plague rat becomes infected, and acts as the medium of conveyance to other animals which are susceptible, and to the human subject. It is believed that the flea does not become the host in the same sense as in the case of the mosquito in malarial and yellow fever infections. The flea, it is stated, at the time of biting passes a fluid from the intestine which contains the bacillus, and which is rubbed into the wound made, either by the hand of the person bitten or by the clothing.

In my interview with Prof. Kitasato, at Tokyo, I understood

that he did not accept, unreservedly, this method of infection in the human subject. He thought the bacillus could enter the body by inhalation or through abrasions on the feet or other parts of the body, the bacilli having been set free from rats dead from the plague, and which had undergone decomposition. Further investigation of this subject, it is hoped, will determine positively the question as to the mode of conveyance of the microbes from the flea to the human subject. It would appear reasonable that the flea should act as the host, as in the case of the mosquito in yellow fever infection.

Calvert (Osler's *System of Medicine*) states that "the origin of the plague among rats has not been determined; it may arise from infected material recently introduced into a district or propagated by cases among them. Rats with open ulcers from broken-down buboes are important factors in keeping the disease alive. Flies and fleas contract fatal plague, the former may infect food, the latter transfer bacilli from place to place, and their bite produce direct infection. Bacilli may remain virulent in the stomach of bedbugs for a number of days; their bite is harmless; if mashed on the wound, infection may take place. Ants harbor bacilli for a number of days or may carry infection from place to place, especially from cadavers to the surface of the ground. Buboes occur most frequently in the groin, next in the axilla. Infection, in a majority of cases occurs through skin of the trunk or extremities, and may enter any abrasion or even microscopic wound of skin or mucous membrane. In children infection occurs most often through abrasion of the buccal mucous membrane. Bacilli introduced into the stomach may or may not produce infection. In all well-advanced cases all of the secretions and excretions may contain bacilli. Pus from buboes, excretions from pustules, vomitus, sputum in pneumonic cases, bedding, furniture, and room

may become infected. Those in attendance are exposed to infection through abrasions. Very few hospital attendants have contracted the disease. Cadavers contain many bacilli, and are dangerous sources of infection until disinfected or destroyed by cremation. One bacillus may produce infection. The viability of bacilli is long; intense cold does not kill the organism. To ordinary disinfectants bacilli are very susceptible. Contagion is conveyed by convalescent patients with old unhealed ulcers from buboes, and individuals who have been exposed to infection but have not developed the disease may convey it. On board of ship, clothing, merchandise, fabrics, and raw materials are most important means of conveying the disease. Water and air are not good carriers of infection. Insects, in limited areas, may be sources of infection. Plague thrives best among those who live in filth. From twenty to forty years of age the majority of cases occur. This is believed to be on account of the exposure which occurs at that time of life."

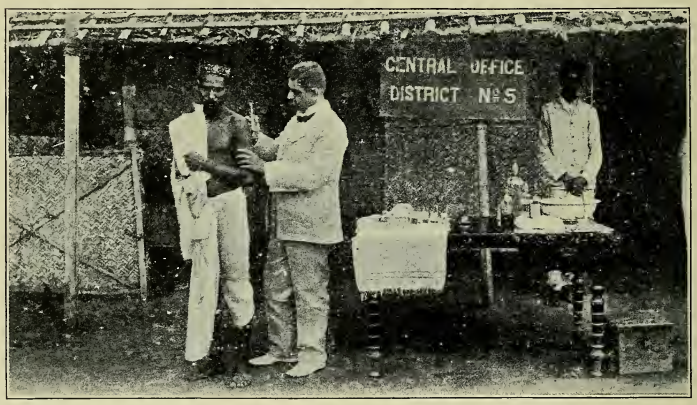
Since my return from the Orient I have had an opportunity to examine the *Public Health Reports* issued each week by the Public Health and Marine Hospital Service of the United States, and have been greatly interested in learning of the extensive work done by this service in connection with the prevalence of the plague at San Francisco and in cities adjacent, Oakland, Point Richmond, and Emeryville, California. The causes of the disease have been attacked with the most modern measures and with an energy which gives promise of complete obliteration, although experience thus far gained seems to indicate that when it once gains a foothold it is not possible to permanently eradicate it. Rat destruction, by trapping and cremation and by the deposit of poisons, has been carried on extensively, those destroyed numbering thousands, and an abatement in the spread of the disease has been noted. I have learned from the Surgeon-General of the Public Health and

Marine Hospital Service that a small quantity of plague serum was used during the early part of the present outbreak in San Francisco, and further, that the Bureau is informed that plague serum has never been successfully produced in the United States, owing to technical difficulties and dangers inseparable from its manufacture. Of these difficulties I was not informed in Bombay, and I was led to believe that the serum was prepared there.

In Bombay I was informed that but two varieties of plague rats had been identified, mus rattus and mus decumanus. In the reports from San Francisco it is stated that in addition to these there have been identified the mus alexandrus and mus musculus. Many thousands of rats have been examined bacteriologically, and some have been, in experimental research work, infected with the Bacillus pestis. A large number of premises have been inspected, many disinfected, and some destroyed. The Government is to be commended for the vigorous way in which the disease has been attacked, through the excellent work of the Public Health and Marine Hospital Service, and the promise of, at least, keeping its dissemination in abeyance is very encouraging. Eternal vigilance will alone keep it from assuming an epidemic form, and that must be practised.

At the time of my visit to Bombay the plague was prevalent in the city and Bombay presidency, the reported deaths numbering weekly some twenty-four hundred. The plague hospital received as many as twenty to thirty cases each day, including the pneumonic and bubonic varieties. The former is very fatal—the lungs are affected and patients die in three or four days after development of the disease. In the bubonic form the inguinal glands are inflamed and pass on to the stage of suppuration; the disease progresses more slowly than in the pneumonic variety. A general septic condition is present in all cases; if recovery takes place, the

convalescence is slow and sometimes retarded by complications. The treatment is expectant, stimulating, and supporting. Suppuration of the affected glands is hastened by poulticing, and aseptic incision is practised when fluctuation is present. Excision of the affected glands has been performed, with the hope of aborting the infection, but without marked success. The prophylactic treatment by serum inoculation is carried out by Government authority among the natives whenever it is possible. Many resident



Prophylactic serum inoculation against plague, Bombay, India.

foreigners submit to the operation. Inoculation is gaining favor, and it is believed that in not many years opposition to its practice by the native population will be generally overcome and it will take its place by the side of vaccination as a well-established preventive measure. The plague serum is prepared at the Parel laboratory and is sent to the different parts of the country. The period of immunity obtained by one inoculation is thought to be not more than two or three years. Experience gained in its use may extend this period.

As in other parts of the Orient, there is at Matunga, a suburb of Bombay, a home for lepers, where some four hundred men, women, and children are cared for. Residence here is not compulsory, but the unfortunate sufferers from leprosy find in the hospital so much comfort and relief from suffering that they gladly remain; moreover, the grounds in which the buildings are placed are made most attractive by plants and flowers and efforts at landscape gardening. I made a visit to this institution in company with the native physician in charge, Dr. Chudder, and was much impressed by what I saw and learned. Patients exhibiting the two forms of the disease, anesthetic and tubercular, were examined in the wards, which were scrupulously clean, well-lighted, and well ventilated. In a few, operative measures by amputation had been tried to stop the progress of the disease in the extremities; these appeared to be successful. Much is done to make the life of the inmates contented; a Hindu temple, a Mohammedan mosque, and a Roman Catholic chapel, built in the grounds, afforded them opportunities to worship according to their creeds. There was no protestant chapel. Missionary protestant ministers from the city, I was informed, came when their services were needed. A school-house provided a place for the instruction of the children, who all seemed to be happy and satisfied with their home. That which interested me greatly was the method employed in the sewage disposal, the resultant obtained being gas, which supplied all the fuel needed in heating and cooking and illumination of the grounds and buildings. A small cremation furnace had been built, which Dr. Chudder hoped would be used by the Hindus in burning their dead. It was, he said, educational in character, and thus far he had succeeded in having one body thus cremated. The substitution of the closed crematory for the funeral pile of wood in the open he regarded as very essential for many reasons.

In Bombay over a hundred lepers wander about the streets and gain a scanty living by begging. In Calcutta the municipal ordinances are very strict with regard to what kind of work lepers may engage in. One ordinance, according to the report which has been made to our Government by the Consul-General at Calcutta, directs that no leper shall, within certain areas, from which lepers may be sent to asylums, personally prepare for sale or sell any article of food, drink, drugs, or clothing intended for human use; bathe, wash clothes, or take water from any public well or tank debarred by any municipal or local by-law from use by lepers; drive, conduct, or ride in any public carriage; or exercise the calling or trade of barber, washerman, water-carrier, baker, confectioner, tailor, draper, haberdasher, domestic servant, schoolmaster, clerk, medical practitioner, or butcher.

In view of these stringent municipal regulations, it would appear that the disease is regarded as hostile, in most marked manner, to the public health and conveyable by personal contact and through food and drink.

Each year in India many lives are destroyed by snake bites, the country being the home of the most venomous specimens of cobras and vipers. I have the report of one year in which 24,000 people were killed, and a large number of domestic animals. The great mortality from this cause has moved the Government to take measures of prevention, and to this end has established a laboratory, under the care of Major Lamb, for the preparation of antivenene, to be used as a curative remedy. This is made from the venom obtained from the venom sacs of the cobras and vipers, and is distributed throughout the country in a dried state, in small phials. Major Lamb, who has had large experience in this work, does not believe that there can be made an antivenene which is a general specific. The antivenene curative in cases of poisoning by

cobra bites must be made from the venom of the cobra, and so in the case of all venomous snakes. This opinion is at variance with that entertained by Calmette, of France, the discoverer of antivenene, who believed in a general specific antitoxin. I saw a number of cobras and vipers in the collection Major Lamb had with him at the Parel Research Laboratory, and was interested in the way they were handled in order to obtain the venom for the manufacture of antivenene. In my early professional life I assisted, at times, Dr. Weir Mitchell in his work in connection with the rattlesnake venom, which was of great value as a scientific contribution. My duty was to hold the snake, an humble, but a very important one. In his own case, Major Lamb exhibits the value of the antivenene as a curative remedy, he having been bitten by a cobra whilst obtaining venom. Owing to delay in getting the remedy, he became profoundly affected by the poison before the injection could be made. The loss of the distal portion of the index finger testifies to the local effect of the fang laceration.

Our country, by reason of the acquisition of Oriental possessions, has become one of the great powers of the world, charged with important responsibilities in the care of Oriental races. Already in the Phillipines have we seen the important part taken by our profession in making that country safe for the residence of military and civil officials reared in the climates and accustomed to the conditions of life belonging here, as well as promoting the conditions of life of the native inhabitants. By reason of our close contact, social and commercial, with Oriental countries, their diseases, with their products, have come to us. The plague has, I fear, a foothold upon our Pacific coast, and leprosy exists, happily to slight extent as yet, in many parts of our country. The progress of the sleeping sickness in Oriental countries gives us warning. I need not tell what is the duty of modern medical science in

dealing, through its disciples, with these conditions. In our country today—in the home, in the village, in the town, in the city, and in the state—the medical profession, equipped with knowledge as never before, and armed with the lessons of experience gained in wide fields, submerged sometimes, it may be, with disaster, or crowned with success, stands on guard, the valiant protector of the health of the people. In reverential memory we will ever cherish the name and the exalted labors of that heroic son of medicine, Dr. Lazear, of the Medical Service of the United States Army, who, in Cuba, gave his life that his fellow men might live, and we point with feelings of pride, which stir to the profoundest depths our patriotic emotions, to the transcendent achievements of Col. Gorgas, Medical Officer of the United States Army, which have made possible the construction of the Panama Canal. May we not justly claim this colossal enterprise, surcharged, as it will be when completed, with the destinies of the people of the world, as a magnificent triumph and the crowning pride and glory of American medicine?

LETTER FROM A "ROUND-THE-WORLDER" ON THE HOME STRETCH.[1]

Medical Matters in Japan; in China; in India.

CROSSING THE ARABIAN SEA EN ROUTE FOR ADEN,
January 27, 1907.

Mr. Editor: I am thus far on my way "round" the world, having left Bombay, India, on Thursday, the 24th inst. I hope to arrive at Port Said, the Mediterranean end of the Suez Canal, on today week, and by the Suez Canal reach Cairo on the second day. I have spent, since my arrival at Yokohama, one month in Japan, three weeks in China, and one month in India. I was greatly interested in what I saw in Japan. The Japanese are wonderful imitators and have, in the few years of their entrance into modern civilization, made marvellous progress in the arts and sciences. In medicine they have accomplished much. Their first teachers were Germans, and the instruction was that of the German school, and, therefore, good. One who visits the university, colleges and hospitals must speak in German. I was surprised to see how excellent was their work in the laboratories and in their teaching system. I was pleased to see a copy of the *International Text-book of Surgery* in the libraries. The practical work in surgery was good, and fully up to date so far as modern methods were concerned.

[1] From Boston Medical and Surgical Journal, February 28, 1907, vol. clvi, No. 9.

The care of the patients in the hospitals was influenced by the modes of life of the people, and could be improved, if it were possible to have them adopt more fully the habits and dress of the white race. I had a very interesting visit to Professor Kitasato's Institute and a pleasant interview with him. As you know, he it was who isolated the "bacillus pestis," "plague germ," and his institute is maintained by the government. He has charge of the preparation of all of the "serums" used in contagious and infectious diseases throughout Japan, and he has under his direction a number of able investigators and assistants, whom he sends to various parts of the country when an epidemic of any disease occurs. When I was there the plague had appeared in Osaka, and a number had gone to fight it. He accepts, with some modifications, the "rat" theory of infection and communication, and conveyance by the "flea" to man. In the institute there were, among many animals of all kinds, two hundred horses which, after infection, provided blood from which the serums were prepared.

In China I saw some of the medical work done by missionary physicians, and that which interested me most was in the Canton hospital, formerly under the charge of Dr. Kerr, whose "stone" operations have a prominent place in the records of surgery. The record is being kept up today, as each week there are a number of operations for stone performed. On one day I saw two done very skilfully by the lateral method, and more cases were waiting. There were also operations on the abdomen, jaws, and other parts; in truth, a list quite as full and important as in one of our hospitals. The hospital accommodations are very crude, a board bed and a blanket. For the stone cases a round hole was made in the board and the patient laid over this. They told me the Chinaman was an excellent subject for operation, not liable to shock, and rarely attacked by septic conditions.

In India I spent a portion of my time in the interior visiting Agra, Delhi, Lucknow, Cawnpore, Benares, and other places possessing great interest in old and new history. The interest of the former times is found in the palaces, forts, mosques, temples, and tombs of the rajahs of former times, three and four hundred years ago. These structures are marvels in architectural skill and artistic combinations, richness in embellishments and harmonious relations. No one who has any appreciation of structural art can fail to be impressed with what was achieved in this direction in those days. The medical work in India is largely, if not entirely, done by the English Government which has control. There are and have been native "doctors," but their practice is and was limited. "Death is the will of God," as it happens to come to Mohammedan, Hindu, Buddhist, Parsee, and by them little is done to interfere with it. The English Government in India is doing all it can to help the four hundred million people, through civil service physicians and surgeons, and in a few centres, as Bombay, Calcutta, and one or two other places, excellent scientific work is done in institutes for research. Rabies prevails largely, and a Pasteur Institute has been organized at Poona, I think, for the treatment of natives bitten by rabid dogs, jackals, etc. The antitoxin is prepared and sent to all parts of the country for use. As you know, each year many natives are killed by venomous snakes. In 1904 over twenty-one thousand perished from this cause. In Bombay the government has established a laboratory, and for some time antivenene has been prepared and used with success. I had an opportunity to see the work of this laboratory, where there are many specimens of the venomous reptiles—cobras and vipers—which are used for the purpose of obtaining the venom and from it making the antitoxin by inoculation of the horse. I also saw two persons, one, Major Lamb, the officer in charge, and a

native, who had been bitten, and their lives saved by injection of the antivenene, with the loss, however, of a portion of a finger. In this laboratory also, under the direction of their officer of the Indian Medical Service, is prepared the plague serum, with which many are inoculated as a preventive, not curative, agent. Rats infected with the plague and having the plague flea on them are trapped by the thousands each day, so many that it requires three or four ox carts to bring them to the laboratory. If not dead, they are killed by chloroform, and the fleas on them, by the same agent, are simply stupefied so they can be "stripped off" and placed in a test tube, where they soon revive. Each rat—a thousand in a day—may be posted and the pathological condition noted. From the buboes, cervical and inguinal, cultures are made and guinea-pigs infected. The fleas are used to convey the plague by confinement in protected boxes with guinea-pigs. The results obtained seem to prove conclusively, first, the rat is infected; second, the flea on the rat is infected; third, the flea getting on to a guinea-pig, non-infected, conveys the plague to it. The human subject is infected in the same manner by the flea by means of the dejections, as it has been observed that while biting the flea passes from the intestines its contents, which infect the wound made by its proboscis. I watched for some time the process very closely and came in contact with many fleas, and have taken all precautions to prevent myself being infected. "Plague" take him, I hear you say, for such a long epistle. And so I stop, telling you that I hope, after a visit to Constantinople and Athens, to go to Vienna, Paris, and London to live over the old days, in a way.

Very sincerely yours,

J. Ewing Mears, M.D.

OBJECT LESSONS FROM BOMBAY, INDIA.[1]

Bombay has many visitors during the cold weather, but there are few who display an active interest in the work of sanitary regeneration which is being accomplished in the city. "Padgett, M.P.," finds little to excite his imagination in the fight with pestilence, and the improvement of the health of a great city moves him less than the perorations of a Congress orator. Now and then, however, there comes along a person who is less concerned with political platitudes than with the efforts being made to ameliorate the material conditions of the people. To such an investigator Bombay can give a great deal of instruction, and this has been generously acknowledged by a well-known medical man of Philadelphia, who has this week been making a close study of the sanitary arrangements of the city. All Americans do not derive the grotesque impressions of British administration in India that Mr. W. J. Bryan carried away with him; and it is an excellent corrective to the opinions of that somewhat reckless orator to have the views of an expert upon the manner in which the practical problems affecting the lives and welfare of the population in India are being dealt with. On questions of sanitation, Dr. J. Ewing Mears, who was seen by a representative of the *Bombay Gazette* after he had completed his tour of Bombay, is especially qualified to speak. He is a member of the American Public Health Association; he has initiated in Trinity College, Hartford, a collegiate course on Sanitary Science, and he has founded a Sanitary Science Library. He has been moved to this

[1] From Bombay Gazette, January 25, 1907.

because he has the strong conviction that sanitary science should be taught in all schools; even in elementary schools he would have the children taught something of the principles relating to the preservation of the public health. In the college the instruction should deal with all the problems of sanitary science, and as far as possible should be practical as well as theoretical. Dr. Mears is a physician and surgeon of forty years' standing, and, living in a large city, he has had ample opportunity of watching the progress which has been made in the development of sanitary methods and conditions, and he has taken some part in his own sphere of activity in helping things along. All this explains his enthusiasm in the investigation of conditions in a city like Bombay, and as the result of his inquiries and inspections, he had nothing but the highest praise for the work that has been and is being done in the peculiar conditions of the East and for the men who are engaged in the task.

As Dr. Mears said, he saw a side of Bombay that is rarely revealed to a visitor, for none but the expert troubles to look into the most deeply interesting phases of the administration of a great city. Only now and then do we give a thought to the men who are the wardens of the teeming life of Bombay, and even of other cities and towns. "I have had the opportunity," said Dr. Mears, "through the courtesy of Mr. W. S. Millard, the Honorable Secretary of the Natural History Society, of making the acquaintance of Colonel Bannerman, Major Lamb, and Captain Liston, and I have visited the Parel Institute for Research. I have nothing to say with regard to that except to express very great praise of those officers, and to commend in the most earnest way the great work which they are doing there. The work is of the highest order of scientific investigation, experimentation, and observation, and I feel confident that it will lead to the most beneficial results in relation to the control of the plague epidemic in this country. It is not for me to discuss the

problem of plague, but I would like to say that the methods of the officers at the Parel Institute are of the highest scientific value. They are entitled to the greatest credit for what they have done, and it will give me great pleasure on my return to my country to tell my profession of what is being done here and to excite them to emulate the example which is given here.

"With regard to the Health Department of Bombay," went on Dr. Mears, "I have had the opportunity, through the courtesy of Dr. Venis, the Health Officer, of seeing many departments of the sanitary work of the city. A visit to the Leprosy Hospital was one I shall never forget. It was full of the greatest interest to me, and I returned from my visit feeling that I had received great instruction from what I saw. The excellent management of the hospital and the gardens attached to it are deserving of the highest praise. The effort to surround these unfortunate people with the beauties of Nature, in the way of plants and flowers and artistic landscape arrangement, is certainly one which appeals to the sympathies of all who are interested in humanitarian work and in the relief of human suffering. Then the fact that the patients are provided with a place of worship according to their religion—a mosque, a temple, a church and so forth is a unique feature. Certainly, so far as I know, no other institution of this character possesses quite the same facilities for the inmates to practice their faith. The fact also that a school exists shows that it is considered necessary that the utmost efforts should be made on behalf of these people and so far as possible to prepare them for their return to healthful conditions."

Dr. Mears was also greatly interested in the economic conditions he found at the Leper Asylum. He was impressed by the adoption here of the most modern methods for the treatment of sewage and its utilization, the production therefrom of gas for illumination and cooking, and the use to which sewage products are put on the farm.

"So far as I am aware," he said, "there is no like set of conditions anywhere else in the world, and the arrangements at this institution are to be highly commended. They are along the line of honest progressive methods in the treatment of the entire subject."

A small crematorium has been established at the Leper Hospital by Dr. Turkhud, the physician in charge. This, Dr. Mears considered to be a very important step in the right direction, regarding it as an object lesson to the Hindus of a better and more sanitary method of disposing of their dead, than the open and crude system of cremation now practised. "It would seem desirable," he observed, "for the municipality or the government to establish in the city of Bombay a number of such crematoria and to try and induce the Hindus to adopt this improved method of burning the dead."

Dr. Mears saw much of what has been and is being done to reconstruct the worst areas of the native city. "Under the guidance of Dr. Venis and his assistants," he said, "I visited the slums of Bombay—the quarters inhabited by the poorest people. I saw the conditions in which these people are compelled to live, and to me it was no wonder that epidemic diseases existed, but I marvelled that they did not exist in greater degree. Seeing these dwellings, I was greatly impressed by the immense difficulties which the Health Department have to contend with in overcoming defective conditions and in establishing those which are in every way sanitary. From these slum quarters I went to the buildings which the Improvement Trust have erected and there I saw what I regard as a most important advance in the amelioration of the condition of these people. The new buildings are constructed on the very best hygienic and sanitary conditions, and the regulations, a copy of which was shown to me, will certainly conduce to the most improved conditions of sanitation which it is possible to apply to an Indian Community.

"I feel as one interested in sanitary matters," went on the Doctor,

"that the great lever in promoting sanitary conditions is the education of the people—the instruction of the people in the application of changed conditions which will induce them to adopt better modes of life. I am induced to mention the method of the disposal of the dead by the Parsees. I don't know whether this is a forbidden subject or not, but I can only say that I trust the intelligent and enterprising Parsee community will, in the future, see their way to the adoption of a more progressive method of disposal of the dead than that of the Towers of Silence. They love to adorn the human body, to make it attractive, and to reverence the 'casket of the soul,' and it seems to me that they should carry this to the treatment of the dead body. If they could be brought to understand the scientific conditions involved in cremation they would see that this method does exactly what they are desirous of securing—it resolves the body into the original elements and in a more wholesome and expeditious way than the practice which is now followed.

"If," added Dr. Mears, "the English Government in its efforts to improve the social, moral, and intellectual condition of the people of this country could abolish *suttee* and infanticide it would seem not an absolutely impossible task to ultimately accomplish results in the direction to which I have alluded."

Dr. Mears makes no pretensions to dogmatize about plague, but like a great many more people he has a theory in regard to it, and it is not without a very special interest. Carlyle gave us the philosophy of clothes, and most of us know that the individual may change his moral character with his garments. Dr. Mears goes farther, for he sees a relation between disease and the character of a man's habiliments. Almost it would seem that he looks to trousers to ultimately extirpate the plague. There is the theory that the plague is mainly in the ground and the people become infected by sleeping on the ground. Now, a man who wears trousers is less likely to

sleep on the ground than a man who has not risen to the appreciation of that garment. Hence—

"It is my feeling," said Dr. Mears, in discussing this ingenious and interesting theory, "that a very great assistance to the introduction of improved sanitary conditions and the promotion of public health is the gradual adoption of the European costume. That is to say, that a great improvement might be expected from so clothing these people as to invite them to keep off the ground."

Finally, Dr. Mears reiterated his appreciation of what he had seen in Bombay. "I feel," he concluded, "that nobody can understand the conditions without personal contact with them, examination and, if possible, careful study. Everyone concerned in the improvement of the sanitary conditions of this country is deserving of the greatest praise for what has been accomplished. I can say that sincerely."

As a parting word this Philadelphia physician added an appreciation of the Natural History Society's museum, which he regarded as one of the educational institutions of Bombay, and deserving of the support of the community.

REMINISCENCES OF THE EARLY DAYS OF THE AMERICAN SURGICAL ASSOCIATION.[1]

The title of my paper presents an opportunity of speaking, in a reminiscent way, of the beginning days of the Association, of placing on record some of the notable events which have occurred in the first quarter of a century of its existence, and of indulging in some reflections on the influence it has exerted upon surgical science in this country, and on its development and growth in the future. It is impossible to speak of the foundation and early days of the Association without paying deserved tribute to the great Surgeon, its Founder, Samuel D. Gross, who in such marked manner has impressed his character upon it.

In undertaking the task which is thus imposed, I am moved to express some hesitation, since, without formal consent, I have assumed to speak for those who, with me, constitute the survivors of the number, forty-four in all, who, in the year 1880, signed the Constitution and became the original Fellows of the Association: P. S. Conner, W. W. Keen, and Solon Marks.

An intimate association with the Founder, and the enjoyment of official position in the Association for quite twenty-five years of its active work, may enable me to perform, in manner acceptable to my co-survivors, the duty imposed.

Of my acquaintance and association with the Founder I may, I trust, with becoming propriety, speak first.

[1] Reprinted from the Transactions of the American Surgical Association, 1908.

This acquaintance began when I brought to him, during the struggles of the Civil War, a letter of introduction from my father, a physician, who had been a college mate with him in Jefferson Medical College, and who had received his degree in medicine as a member of the first class which graduated from that institution, in the year 1827, after a full two years' course of instruction of three months each, reinforced by the fiction of a year's study and apprenticeship in the office of the preceptor; mayhap, in those early days the honored and beloved family physician in the city, or the autocratic Solon of the small community, the country practitioner, the deft wielder of the venesecting lancet; the unrelenting dispenser of dram doses of the mild chloride of mercury and pint draughts of nauseous decoctions of barks and herbs; withal, the true friend, the wise counselor, the bearer of cheer and sunshine into the cheerless room of the log cabin, the sagacious medical adviser, with knowledge founded upon years of carefully observed experience, the faithful physician, to whom the night was not given for rest, nor the day for recreation, whom storm did not stay, nor balmy breezes lure from duty.

At the same time with me, making likewise his acquaintance, there came a Fellow of our Association, whose name, through the achievement of his distinguished ancestor, enriched by his own endeavors, will live forever in the history of surgery—John Collins Warren.

The acquaintance with the Founder of our Association thus begun, ripened in the succeeding years into an enduring friendship, which ended only with his life, and controlled in marked manner my professional career. Honored by his confiding friendship, I learned to know him as a man, and as his assistant in his private and public surgical practice I learned to know and appreciate him as the great surgeon, the eloquent and forceful expounder of

the principles and practice of surgery in the lecture hall, the erudite author of monographs and text-books on the science and the art of surgery, and the pioneer worker and author in pathological research in this country. He was not only the fearless surgeon, but, as well, the wise physician. With him, in many cases, the knife was the "dernier ressort," brought into action only after most careful study and discriminating judgment had made sure the need for its use, and his mind's eye had looked upon the hidden morbid condition, and had given to him a true picture of its nature. Diagnosis by exploratory operation was little, if, indeed, ever, cultivated by him, and Hogarth's artistic curves did not limit his operative procedures.

Of stalwart form, with a commanding presence and the front of Jove, he stood in the clinical arena the type of the great teacher. When inspired by the exposition of some important subject which was of paramount interest to him, and with which his mind and heart were filled, he rose to a majestic height, and the words of instruction which flowed from his lips, as the stream from the overflowing fountain, held his audience in close and charmed attention. His superiors, on such occasions, he had not—his equals, if such existed, were, indeed, few. "*Hier stehe ich, ich kann nicht anders.*" Words which, with him, as with the great Reformer who gave them birth, gave expression to the resolute convictions which inspired his opinions and guided his teachings. A tireless worker, his day from early morn was given to ceaseless work, and in his office library he burned to the dregs the midnight oil. "Nulla dies sine linea," was the legend of his life, and it guided him to the last days of his years. With becoming deference the writer feels he can place on record words spoken on the day before death came to him. "I have yet work to do. Why should I die?" Overwhelmingly absorbed as he was in work, he yet gave time to much

needed relaxation in social amenities. The doors of his hospitable home were ever open to members of his profession from all parts of the country, and to distinguished men of learning from all parts of the world. He appreciated, to the fullest extent, the value of this social intermingling of members of the profession, as a means of promoting interchange of thought and the study of individual character, and he desired to make it a prominent feature of the Association he founded.

Such is, in brief, a portraiture of our Founder. Filling the eminent position he did in our country, known as he was in the countries of the Old World, and crowned, as he had been, with the highest honors of their great institutions of learning, he, of all others, was best qualified to bring into existence an Association which would gather together, for the cultivation of surgery, the surgeons of the country, prominent as authors, teachers, and skilled practitioners. He designed it to be a school for mutual instruction and improvement, a court of supreme authority into which the great questions of Surgery should be brought for discussion and judgment, a gathering in social intercourse of the individual workers in surgical science. Medical politics was to be forever debarred, was to have no place in the deliberations of the organization. The great representative association of the medical profession of the country afforded a large field into which all questions affecting the "body politic" could be brought for adjudication—and were there to be left. Personal friendship was not to be the test of the qualifications of the candidate seeking admission into the association, nor personal animosities or local factional contests the bars which would shut out the eligible candidate.

Our Founder, cherishing the desire he did with regard to the formation of the Association, called about him, at the time of the meeting of the American Medical Association, at Atlanta, Georgia,

in the year 1879, a few of the prominent surgeons there assembled in attendance, and disclosed to them the object which was very close to his heart. Although this meeting has taken the place in the minutes of the Association as the first, in chronological order, it was simply a meeting for conference. Its purpose was to obtain an expression of the feeling which might exist as to the desirability of forming an organization such as he contemplated, and in order that formal discussion of the subject should take place, it was duly organized by the election of a chairman and secretary. The discussion which ensued developed the fact that the sentiment was markedly unfavorable, if not positively hostile. By some, the opinion was expressed that the movement had the character of an attack upon the American Medical Association, intended to destroy its influence as a representative body of the medical profession; it would originate, they contended, a condition which, if extended to other specialties of medicine, would result in its disintegration. It was claimed that all of the objects sought to be accomplished by such an Association could be accomplished through the Surgical Section of the American Medical Association.

Without taking any action whatever, the conference adjourned, and later, at a consultation held with friends of the project, it was decided to issue the following circular letter: "The undersigned respectfully solicit your coöperation in founding a National Surgical Society, to consist, exclusively, of distinguished surgical practitioners, writers, and teachers, and request you to attend a meeting to be held at the College of Physicians and Surgeons,[1] New York City, on Monday, May 31, 1880, on the adjournment of the meeting of the American Medical Association. Signed by W. W. Dawson, Moses Gunn, L. A. Dugas, W. T. Briggs, and S. D. Gross."

[1] Now Medical Department, Columbia University.—Ed.

At the place, and on the date, given in the circular letter, surgeons who had been invited assembled, and a temporary organization was affected by the election of Dr. L. A. Sayre as Chairman. In some well-chosen remarks Dr. Gross presented the object of the meeting, and then moved that an Association, such as contemplated in the circular letter, be formed. This motion was unanimously approved, and he then offered a draft of a Constitution and By-laws, to constitute the organic law of the Association, which, on motion, was adopted, and those present, forty-seven in number, signed it, paid the initiation fee, and thus became the original members of the American Surgical Society, as it was designated in the draft of the Constitution and By-Laws proposed and submitted for adoption by the Founder. The formal and perfected organization of the Association was then effected by the election of Dr. Samuel D. Gross as the first President and Dr. J. R. Weist as the first Secretary, with other officers to conduct the business affairs of the Association. It was deemed desirable to submit the Constitution and By-Laws to examination and to revision, if found necessary, and to this end a committee, consisting of Drs. John H. Packard, John Ashhurst, Jr., John H. Brinton, W. W. Keen, and J. Ewing Mears, was appointed, and instructed to report at the next meeting, which, on motion for adjournment, was ordered to be held in Richmond, Virginia, on May 5, 1881.

With these ceremonies, simple in character, the American Surgical Association was brought into existence, charged with most important responsibilities as to the development and growth of surgical science in our country. By its organic law it imposed upon its members and their successors most responsible duties for the maintenance of the high standard of qualification of those who should be admitted to its Fellowship, as therein provided.

A national character was given to the Association in the list

of surgeons whose names were affixed to the Constitution at this time of its organization. Among them were James R. Wood and L. A. Sayre, New York; J. C. Hutchison, Brooklyn; E. M. Moore, Rochester; Moses Gunn, Chicago; John T. Hodgen, St. Louis; T. G. Richardson, New Orleans; Claudius H. Mastin, Mobile; L. A. Dugas and Henry F. Campbell, Augusta, Ga.; R. A. Kinloch, Charleston; Hunter McGuire and James L. Cabell, Richmond; Christopher Johnston, Baltimore; W. W. Dawson and P. S. Conner, Cincinnati; David W. Yandell, Louisville; Samuel D. Gross, S. W. Gross, John Ashhurst, Jr., W. W. Keen, and T. G. Morton, Philadelphia; Solon Marks, Milwaukee; and J. R. Weist, Richmond, Indiana, all distinguished as surgical practitioners, writers, or teachers. Of these surgeons of our country at that period, of the work accomplished by them, and of the influence exerted by the Association since its organization, Dr. P. S. Conner, one time President, and one of the survivors of the original Fellows, thus writes: "I join you most heartily in appreciation of our early associates and recognition of the value of the work done and influence exerted by them. American surgery today owes much to the American Surgical Association, and our literature has been much enriched by the contributions of those who are now but a memory."

As ordered, the next meeting was held in the city of Richmond, on May 5, 1881, at which nineteen Fellows were present and no scientific business was transacted. The Committee on Revision of the Constitution and By-Laws reported several amendments, which were adopted, the most important of these consisting in the change of the name from the American Surgical "Society" to that of the American Surgical "Association," and those constituting the membership being designated as "Fellows" instead of "Members." The initiation fee was reduced from twenty-five dollars

to ten dollars, and it was ordered by vote that the difference, fifteen dollars, should be returned to those who had paid the larger sum. A subsequent alteration in the By-Laws fixed the sum at fifty dollars, where it now stands.

One surgeon who had been invited by the circular letter to participate in the organization of the Association, but who could not be present at the meeting held for that purpose in New York, was permitted to sign the Constitution as an original member, this act making the total number forty-eight. Some feeling of discouragement was manifested at the absence of any scientific business, but this was soon dissipated by the encouraging words of the President, who called attention to the fact that all scientific bodies required time to perfect an organization, and he expressed the hope that a number of papers would be presented at the next meeting. It is most interesting, as well as gratifying in the highest degree, to compare the program of the present meeting, held in the same place and within a day, on the same date in the year, with that held twenty-seven years ago. A grand total of forty papers, on the most important subjects, engaging at the present time the attention and study of the surgeon, five of which are to be read by title, find place upon the program. Moreover, the presence and active participation in the scientific proceedings of the Association of a number of distinguished surgeons from abroad give a distinction to the meeting, alike honorable and gratifying. Truly, indeed, has the prophetic vision of our Founder been verified, and fortunate are those of us who are present to witness its full accomplishment.

The meeting at Richmond adjourned to meet at Coney Island, Long Island, New York, on September 13, 1882, at which time the meeting was held, and eleven Fellows were present. Several papers were read and discussed. It became evident at this meeting that there should be provided, in order to give the character to the

Association it was intended to have, a definite system with regard to the scientific business, and that a reporter should be chosen, who should be an officer of the Association, whose duty it should be to take full and accurate reports of the scientific proceedings, to be published annually in a volume of *Transactions*. In order to accomplish these important objects, amendments to the Constitution and By-Laws were submitted by the writer, which provided that the President should, in addition to the other duties of his office, appoint at each meeting six Fellows to prepare papers for the next meeting, on subjects chosen, after consultation with the appointees, and from four to six Fellows who should discuss the propositions submitted in these papers, which were to be sent to them by the writers in ample time for consideration. The reporter was to be designated as the Recorder, and was to be a member of the Publication Committee and the editor of the volume of *Transactions*. In the twenty-five years of the life of the Association this important matter has undergone several changes and re-arrangements, the object sought for being always to provide the best method for the conduct of the scientific business of the Association—one which would invite carefully prepared papers on important subjects, not in too great number, which should receive careful discussion, in order that, through this discussion, the judgment of the Association should be rendered and published to the world. Later revisions of the Constitution relieved the President of the duty of selecting readers of papers, and placed the duty in the hands of a Business Committee. Still later revisions of the Constitution confided the subject to the Committee on Annual Meeting, which consists of two Fellows elected by the Association, with the President, Secretary, Recorder, and Chairman of the local committee of arrangements, members *ex-officio*. This matter is regarded of so much importance as to justify its record in detail.

While there were several papers, five in number, read at this meeting, and some discussion of them, there appeared to be but little enthusiasm manifested, and discouragement as to the future success of the Association was in evidence. The committee appointed to select a place for the next annual meeting was requested by Dr. S. W. Gross and the writer to name the city of Philadelphia, they feeling that in this city it would be possible to arouse interest in the purposes of the Association, and place it upon a stable foundation. The city of Philadelphia was chosen as the place of the next meeting, and Drs. S. W. Gross, R. J. Levis, and the writer were appointed the Committee of Arrangements. At the time appointed, May 31, 1882, the Association met. There were twenty-five Fellows present, and the six Fellows appointed by the President at the last meeting read papers upon interesting subjects, which were fully discussed; in addition, two volunteer papers were read.

On taking the chair, the President delivered a short address, in which he pointed out the necessity for the founding of the Association, and denied, in earnest terms, that its organization was intended in any way to be a blow struck at the American Medical Association. He claimed that body would be strengthened by this organization, and have new life infused into it. He said: "We can hurt no association now in existence, or likely to come into existence. We can only hurt ourselves if we fail to do our duty. We hope to make the American Surgical Association an altar upon which we may annually lay our contributions to surgical science, and to show to the world that we are earnest and zealous laborers in the interest of human progress and human suffering." He called attention to the fact that the previous meetings, with the exception of that held at Coney Island, were held to perfect the organization of the Association. The program presented for the meeting

promised important scientific work. He referred to the importance of the social features of the annual reunions. In this direction, the Committee of Arrangements in charge of this meeting has made ample provision. In the executive session, on the concluding day of the meeting, the Secretary was, on motion, instructed to cast an affirmative vote for fifty candidates for election as Active Fellows, and six as Honorary Fellows, whose names had been selected, after informal consultation, on the part of the Council and Committee of Arrangement. This action, which, at one stroke of the pen, as it were, extended the list of fellowship to ninety-six, within four of the constitutional limit, was an unusual procedure on the part of a scientific body. It was largely the result of the enthusiasm engendered by the pronounced success of the meeting, scientifically and socially. The feeling was unanimous that the Association had been successfully launched, and had taken its place as a recognized body in the surgical world. Inspired, possibly, by the same feeling, an amendment to the Constitution was offered increasing the limit of fellowship to one hundred and fifty. This amendment was very wisely laid on the table; subsequently, on motion, it was taken from the table and ordered to lie over until the next meeting for action. The effort which manifested itself on this occasion to increase the fellowship of the Association was finally successful, a few years since, in increasing the number to one hundred and twenty-five, a happy compromise. The provision made by amendment to the Constitution for a class of Senior Fellows, in addition to the two already provided for, Active and Honorary, has given a very elastic limit to the Active Fellowship, and one which, while it will not limit the number of those eligible for active work, will keep it near to the original limit of one hundred Fellows. The intention of the Founder of the Association, with respect to the character of the organization he desired to found, was given expression too wisely

in the limitation of membership incorporated in the original draft of the Constitution. He sought to secure in the fellowship of the Association qualification in the individual, not length in the roll-call. The limitation in fellowship fixed for the Association gave it at once a standard of excellence and of honorable distinction, which stimulated worthy ambition and made admission into it an honor to be sought after.

An election for officers was held, and Dr. Gross was chosen for the fifth time to fill the high office of President. The city of Cincinnati was named as the next place of meeting, which was to be held on May 31, 1883. At this meeting sixteen papers, six regular and ten volunteer, were read and discussed. The amendment to the Constitution, in order for action at this meeting, fixing the limit of Active Fellowship at one hundred and fifty, was defeated. A resolution was adopted providing for a dinner at the future meetings of the Association, to be arranged by the Committee of Arrangements and to be paid for by Fellows participating therein. This dinner was given at a number of meetings, but was finally abandoned. The desire entertained by the Founder of the Association to include in the program of the meetings a function of this character would seem to be worthy of consideration. A formal dinner is the climax of entertainment, and is, the world over, the accompaniment of the assemblages of the eminent men composing learned bodies in art, in science, in statecraft, in commerce, and in every and all associations of men engaged in carrying on the work of the world. The function might assume, in our Association, the form of a reception, to be held by the presiding officer, which would afford an opportunity for social intercourse among the Fellows, and would not only be enjoyable, but of service in promoting good fellowship and harmony in its work.

When the time for the election of officers arrived, Dr. Gross, in a

few feeling remarks, declined to be again a candidate for the office of President. He thought it very desirable, and for the best interests of the Association, that there should exist a system of rotation in the office. Such a plan would result in giving to the Association the benefit of new methods of administration, the infusion of fresh spirit into its work, the avoidance of control by routine and tradition. It was a source of great pride and gratification to him to see the Association in such a prosperous condition. He felt that the ambition he had cherished with regard to its foundation and successful beginning had been fully realized, and he wished to place into other hands the honors of office and the responsibilities of its further development and growth. That in coming years it would continue to maintain the high standard which had been fixed for it, and that it would exert always a most beneficial influence on surgical science in this country, he did not doubt. In a voice choked with emotion, he bade the Association an affectionate farewell.

In response to the words of parting spoken by the President, Dr. David W. Yandell, in most eloquent terms, expressed the feelings of regret entertained by the Fellows of the Association on learning of his decision to lay down the honors of office. His master mind, he said, had brought the Association into existence, and his master hand had guided its progress to this period of its life. With sentiments of high esteem and affection, to which words fail to give adequate expression, he bade him, on behalf of his associates, farewell.

Dr. E. M. Moore was elected President, a few candidates for Fellowship were elected, and the Association adjourned to assemble in Washington, on April 3, 1884. It would seem appropriate to limit the chronicles of the early meetings of the Association to those over which our Founder, as the first President, presided. Some

interesting events, however, transpired at the meeting which succeeded his retirement, which was held in the city of Washington on April 3, 1884, which are worthy of record. There were forty-three Fellows present, and thirty papers were presented, eighteen of which were read and discussed, and six were read by title. The number of Fellows present, and the number of papers presented, were the largest of any of the meetings yet held. At this meeting the resignations of three Fellows, two Active and one Honorary, were presented and accepted, this action being in response to the request of the Association, by reason of alleged violations of the Code of Ethics of the American Medical Association, which had been adopted and incorporated in the Constitution of the Surgical Association. Since then this clause of the Constitution has been, very wisely, expunged. An event which caused a feeling of much sadness was the illness of Dr. Gross, which unhappily proved to be his last. Desiring to give evidence of his continued interest in the scientific work of the Association, he had sent a paper, prepared in the beginning days of his illness, on "Wounds of the Intestines," which was read by Dr. T. G. Richardson, of New Orleans, one time his student. Telegrams expressive of the great regret felt by the Fellows of the Association, and of the hope of his speedy recovery, were sent to him by the President. On account of the illness of Dr. Gross, the annual banquet was omitted.

A most noteworthy event of this meeting was the presentation by the Recorder, Dr. J. Ewing Mears, of the report of the Committee of Publication, giving an account of the publication and issue of the first volume of the *Transactions of the Association*, the edition numbering five hundred copies. This volume contained five hundred and sixty-eight pages, and included all of the papers read at the meetings held at Coney Island, Philadelphia, and Cincinnati, thirty-two in number, with the discussions, and seventeen illustra-

tions. The cost of the volume was $1393.63. It had been distributed to the Fellows of the Association, Active and Honorary, to medical libraries in this country and abroad, complimentary copies were sent to distinguished members of the profession at home and abroad, and one hundred copies were deposited for sale. Before the binding of the volume was completed, the Recorder, Dr. J. Ewing Mears, sent to Dr. Gross a copy of the unbound leaves, and received from him a note commending it as a volume worthy of the Association, and concluding his note with this injunction: "Don't cut the leaves," which was obeyed; and the first volume was issued with uncut leaves.

On retiring from the office of President, Dr. Moore called attention to the work the Association had accomplished during the session just completed, and pronounced it good. He felt called upon, however, to state that the provisions of the Constitution had been violated, inasmuch as thirty papers had been presented, twenty-four of which had been read in full and discussed, and six read by title; instead of only six, or two each day, as therein provided for. He earnestly recommended that in the future this clause of the Constitution be strictly complied with, since it would lead to the presentation of more carefully prepared papers and afford more time for their reading and discussion. "This," he said, "is a most important matter, and should claim the earnest attention of the Association. We desire quality, not quantity."

A feeling having been expressed that the interests of the Association would be promoted in having a permanent place of meeting, it was ordered by vote that in the future the meetings should be held each year in the city of Washington, at the time fixed on the adjournment of this session. This was done for a period covering eight years, until the year 1892, when it was decided to return to the peripatetic or itinerant method, assembling every third year in

Washington, at the time of the meeting of the Congress of Physicians and Surgeons. While much that is interesting and instructive is to be seen and enjoyed at the various places of meeting of the Association, crowned on the present occasion by social events of most gracious courtesy, it is an open question whether a fixed place of meeting would not contribute to a more serious execution of its business, its real business, its scientific work. One of the constituent societies of the Congress, that of the American Physicians, has adopted this plan, and, I believe, it is the custom observed generally by scientific bodies abroad.

The selection of a permanent meeting place for the Association might result in the future years of its existence in the erection in the city of Washington of a building suitable for its purposes, provided with an assembly hall, a banquet room, and other rooms for the meeting of the Council and committees intrusted with its business affairs. As years increase, the surplus volumes of our *Transactions* and the archives of the Association will accumulate, and should have quarters in which they may receive careful preservation. A movement begun at this time, the termination of the first quarter of a century of the existence of the Association, may secure sufficient funds to make a beginning. Contributions and endowments in years to come may assure the realization of the project. The advantages which will come to the Association in carrying out a plan of this character may not be fully foreseen, but that they will come would seem to be undoubted. It will give solidity and dignity to our Association to be an incorporated body quartered in a permanent abode in the capital city of our great and growing country. Should not American surgery have an imposing temple upon whose walls shall be emblazoned the names of those who in the past have been its pioneers, and who have, by their achievements, made its history, honorable above reproach and enduring in its character?

With this account of the early meetings of our Association, and of the more important events which transpired in the early days of its life, we may rest in our detailed report. In the meetings which have followed, in each year, important work has been done. Upon the subjects of surgery which have claimed the attention of the surgical world papers have been written, discussions held, conclusions determined, and published to the world.

It will be interesting to place on record the titles of some of the papers read and discussed at the early meetings of the Association.

By Dr. Samuel D. Gross, "The Value of Early Operations in Morbid Growths."

By Dr. Samuel D. Gross, "Wounds of the Intestines."

By Dr. W. T. Briggs, "The Antiseptic Treatment of Wounds after Operations and Injuries." Read at the meeting in 1882.

By Dr. E. M. Moore, "Report of Cases Illustrating the Conditions of Luxation of the Ulna in Connection with Colles' Fractures."

By Dr. John H. Packard, "Esophagotomy without a Guide."

By Dr. Moses Gunn, "Treatment of Fractures of the Skull, Recent and Chronic, with Depression."

By Dr. R. J. Levis, "Treatment of Transverse Fracture of the Patella, with the Object of Producing Bony Union."

By Dr. J. R. Weist, "Foreign Bodies in the Air-passages—A Study of 1000 Cases to Determine the Propriety of Bronchotomy in such Accidents."

By Dr. J. C. Hutchison, "A Résumé of the Etiology, Pathology, Diagnosis, and Treatment of Morbus Coxarius."

By Dr. C. B. G. de Nancrède, "Have We any Therapeutic Means as Proven by Experiment, which Directly Affect the Local Processes of Inflammation?"

By Dr. C. B. G. de Nancrède, "Surgical Interference in Cerebral Abscesses."

By Dr. T. G. Richardson, "The Use of the Trephine in Traumatic Empyema Associated with Thoracic Fistula."

By Dr. Basil Norris, Surgeon, U. S. A., "Dislocations of the Astragalus."

By Dr. P. S. Conner, "Excisions of the Tarsus, with a Report of Two Successful Removals of the Entire Tarsus."

By Dr. Solon Marks, "Trephining the Sternum for the Removal of a Foreign Body from the Anterior Mediastinum, with a Report of a Case."

By Dr. Henry F. Campbell, "Strictures of the Esophagus, Their Nature and Treatment with Cases."

By Dr. McLane Tiffany, "A Contribution to the History of Ligation of the Common Femoral Artery."

By Dr. B. A. Watson, "Lister's System of Antiseptic Wound Treatment versus its Modifications."

By Dr. B. A. Watson, "An Experimental Study of Anesthetics."

By Dr. S. W. Gross, "The Influence of Operations upon the Prolongation of Life and Permanent Recovery in Carcinoma of the Breast."

By Dr. S. W. Gross, "A Case of Nephrectomy for Medullary Carcinoma, and Partial Cholecystectomy for Calculus in Same Subject."

By Dr. S. W. Gross, "Gastrostomy, Esophagectomy, Internal Esophagotomy, Combined Esophagostomy, Esophagectomy, and Retrograde Divulsion in the Treatment of Strictures of the Esophagus."

By Dr. John B. Roberts, "The Localization of Perinephric Inflammation, by Means of Clinico-anatomical Study."

By Dr. J. Collins Warren, "The Healing of Arteries after Ligature."

By Dr. Nicholas Senn, "Intracapsular Fracture of the Neck of the Femur with Bony Union."

By Dr. Nicholas Senn, "Experimental Researches on Cicatrization in Bloodvessels after Ligature."

By Dr. Nicholas Senn, "An Experimental and Clinical Study of Air Embolism."

By Dr. Christopher Johnston, "Diagnostitial Laparatomy."

By Dr. Harold C. Ernst, by invitation, "A Consideration of the Bacteria of Surgical Diseases."

By Dr. Roswell Park, "A Case of Lipoma of the Testes, Weighing Four Pounds, a Successful Nephrectomy for Fibrocystic Disease of the Kidney in a Boy aged Twenty-three Months."

By Dr. J. Ewing Mears, "Closure of the Jaws and its Treatment, by a New Method of Operation."

By Dr. J. Ewing Mears, "The Intraperitoneal Method of Treating the Pedicle in Ovariotomy."

By Dr. J. Ewing Mears, "A Contribution to our Knowledge of the Pathology of Trifacial Neuralgia, with the Report of a Case in which Three Inches of the Inferior Dental Nerve were Excised, with the Suggestion, for the First Time Made, as Stated by Krause, of the Removal of the Gasserian Ganglion in Order to Obtain Permanent Relief in such Cases."

The limit in time, for the reading of papers and for discussions, has been, from time to time, a subject for decision.

At the meeting in 1885 it was moved to limit the time for the reading of a paper to thirty minutes. A motion to amend was made to limit the time to forty-five minutes, and, finally, it was moved to limit the time to one hour, which was adopted. At present the time limit is fifteen minutes; a significant change, and one open to discussion as to whether it is quite just to a writer of a paper, who has given time and work to its preparation, to be com-

pelled, by the time limit, to stop the reading at, possibly, the most important part, and thus fail to bring the subject before the Association in proper form for intelligent and full discussion. Better, fewer papers, with ample time for their reading and discussion, than a mass not fully read nor discussed in a proper way.

A most notable event, reference to which should not be omitted, occurred in the movement which had its origin in the Association, and which resulted in the foundation of the Congress of American Physicians and Surgeons. To the zealous efforts of Dr. Claudius H. Mastin, Fellow of the Association and one time its President, the Congress owes its existence. At the meeting of the Association held in Washington, April 28, 1886, Dr. Mastin presented a communication in which it was suggested that action be taken by the Association to secure the formation of a Congress of American Physicians and Surgeons by the union of the nine special societies then existing. After the reading of the communication and some discussion of the project, a motion to lay it on the table was made, and defeated. On motion then made by the writer, the Memorial was referred to a special committee consisting of Drs. Christopher Johnston, W. T. Briggs, and the writer, with instructions to report during the session. The Committee reported as follows: "That it views with great satisfaction the perfection of a plan through which the meeting of the special associations named in the Memorial, in the city of Washington at the same time of the year, may be accomplished, and the meeting of all of these associations in general assembly on such days as may be determined for the purpose of addresses upon the general subjects in medicine. Such meetings to be held without any formal organization through which the associations meeting will sacrifice their autonomy." The Committee presented a resolution asking for the appointment of a committee of five Fellows, authorized to confer with committees of other associa-

tions interested in the adoption of a plan of a convention, and report at the next meeting. The resolution was adopted, and Drs. Claudius H. Mastin, Charles T. Parks, J. Ford Thompson, Nicholas Senn, and the writer were appointed members of the committee.

In due time the Congress was organized, and it holds now its meetings every third year in the city of Washington. Of the great influence exerted by it upon the progress of medicine in our country there can be no question; in one organization it unites the workers in all of the special branches of medicine.

Dr. Reginald H. Fitz, President of the Congress at the last meeting, writes: "I believe in the Congress as a means of promoting acquaintance between representative men in the various parts of the country. Progress in medicine depends upon the individual worker, and encouragement comes from the Association."

Another event of special interest to the Fellows of the Association should be noted—the erection of a bronze statue of the Founder of our Association in the city of Washington. The funds necessary to accomplish this object were contributed, in part, by the Government, which not only gave the site, but appropriated $1500 for the pedestal, by the Fellows of the Association, by the Alumni Association of Jefferson Medical College, by members of the medical profession throughout the country, and by friends outside of the profession. The site of the monument, near to the Smithsonian Institution and to the Library of the Surgeon-General of the United States Army, is well chosen, and affords an opportunity to those who visit these depositories of scientific lore to look upon the features of one who filled an eminent position in his Profession and achieved, through his labors, enduring honors.

Our Association returns to this city, the capital of the historic commonwealth, which was the birthplace and the home of George

Washington, who will ever live in the hearts of the people as the Father of his Country, to celebrate its silver anniversary. In commemoration of this happy event, its loyal sons, bearing tokens of devotion, come to pay homage at its Court, to testify in terms of congratulation to the great work it has accomplished, to honor the name it has given to American surgery, to speak for the future the words of hope, and to renew their pledges of loyalty to the promotion of its high aims.

We, the few survivors of those who began the work of the Association, bring wreaths of victory to lay upon its altar, the emblems of faith which has been well kept, of work which has been well done. For them, and in their name, we ask that the high ideals cherished by our illustrious Founder may ever control the endeavors of our Association, and be the guiding star of its destiny.

PRESIDENTS OF THE AMERICAN SURGICAL ASSOCIATION FROM DATE OF ITS FOUNDATION, 1880, TO THE YEAR 1900.

Samuel David Gross, M.D., LL.D., D.C.L. Oxon., LL.D. Cantab., LL.D. Edin.
Edward Mott Moore, M.D., LL.D.
William Thompson Briggs, M.D.
Moses Gunn, A.M., M.D., LL.D.
Hunter McGuire, M.D., LL.D.
D. Hayes Agnew, M.D., LL.D.
David Williams Cheever, M.D.
David W. Yandell, M.D.
Claudius Henry Mastin, M.D., LL.D.
Phineas Sanborn Conner, M.D., LL.D.
Nicholas Senn, M.D., LL.D.
James Ewing Mears, A.M., M.D., LL.D.
Frederic S. Dennis, M.D.
Louis McLane Tiffany, A.M. Cantab., M.D.
John Collins Warren, M.D., LL.D., Hon. F.R.C.S. Eng.
Theodore P. Prewitt, M.D.
William Williams Keen, A.M., M.D., LL.D., Hon. F.R.C.S. Eng.
Robert F. Weir, A.M., M.D., LL.D., Hon. F.R.C.S. Eng.

NUMBER OF THE ORIGINAL FELLOWS, FORTY-EIGHT—SURVIVORS, 1908, FOUR.

Phineas Sanborn Conner, M.D., LL.D.
William Williams Keen, A.M., M.D., LL.D.
Solon Marks, M.D.
James Ewing Mears, A.M., M.D., LL.D.

HONORARY FOREIGN FELLOWS.

1882—1900.

Thomas Annandale, Regius Professor of Clinical Surgery in the University of Edinburgh, Edinburgh, Scotland.

Ernst von Bergmann, Professor Geh. Med. Rath., Klin. Institut für Chirurgie, Berlin, Germany.

A. C. Theodor Billroth, Professor of Surgery at the University of Vienna, Vienna, Austria.

Thomas Bryant, London, England.

John Chiene, Professor of Surgery in the University of Edinburgh, Edinburgh, Scotland.

Vincent Czerny, Professor of Surgery in the University of Heidelberg, Heidelberg, Germany.

Arthur Edward Durham, Senior Surgeon to Guy's Hospital, London, England.

Sir John Eric Erichsen, Emeritus Professor of Surgery in University College, London, England.

Carl Gussenbauer, Imperial and Royal Professor of Surgery and Chief of the Second Surgical Clinic and of the Surgical Institute, Prague, Germany.

Reginald Harrison, London, England.

Friedrich von Esmarch, Professor of Surgery in the University of Kiel, Kiel, Germany.

Sir A. H. Victor Horsley, London, England.

Sir George Murray Humphry, Cambridge, England.

Theodor Kocher, Professor of Surgery, University of Berne, Berne, Switzerland.

Bernhardt von Langenbeck, Wiesbaden, Germany.

Lord Joseph Lister, Professor of Clinical Surgery in King's College, London, England.

Sir William MacCormac, Surgeon to St. Thomas' Hospital, London, England.

Sir William Macewen, Glasgow, Scotland.

J. N. von Nussbaum, Professor of Surgery in Munich, Munich, Germany.

Dr. Leopold Ollier, Lyons, France.

Sir James Paget, London, England.

Jules E. Péan, Member of Academy of Medicine, Paris, France.

Felix Terrier, Professor of Operative Surgery in the Faculty of Medicine of Paris; Surgeon to the Hôpital Bichat, Paris, France.

Karl Thiersch, Professor Geh. Med. Rath., Leipzig, Germany.

A. A. S. Verneuil, Professor of Clinical Surgery at the Faculty of Medicine of Paris, Paris, France.

Richard von Volkmann, Professor of Surgery at the University of Halle, Halle, Germany.

Sir Thomas Spencer Wells, London, England.

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